

WHAT IS CLAIMED IS:

1. An apparatus comprising:
a thin-film resonator fabricated on a semiconductor substrate;
bonding pad connected to said thin-film resonator, the bonding pad forming a Schottky diode with the substrate to protect said thin-film resonator from electrostatic discharges.
2. The apparatus recited in claim 1 wherein said bonding pad forms a plurality of Schottky diodes with the substrate.
3. The apparatus recited in claim 1 wherein said bonding pad comprises a conductive material.
4. The apparatus recited in claim 1 wherein said bonding pad comprises conductor selected from a group consisting of gold, nickel, and chrome.
5. The apparatus recited in claim 1 wherein said thin-film resonator comprises piezoelectric portion sandwiched by a bottom electrode and a top electrode.
6. The apparatus recited in claim 5 wherein the piezoelectric portion comprises Aluminum Nitride and said bottom and top electrodes comprises Molybdenum.
7. A method for fabricating an apparatus, the method comprising:
fabricating a thin-film resonator on a substrate;

fabricating a bonding pad connected to said thin-film resonator, a portion of said bonding pad in contact with the substrate to form a Schottky diode.

8. The method recited in claim 7 wherein said bonding pad forms a plurality of Schottky diodes with the substrate.
9. The method recited in claim 7 wherein said bonding pad comprises a conductive material.
10. The method recited in claim 7 wherein said bonding pad comprises conductor selected from a group consisting of gold, nickel, and chrome.
11. The method recited in claim 7 wherein said thin-film resonator comprises piezoelectric portion sandwiched by a bottom electrode and a top electrode.
12. The method recited in claim 11 wherein the piezoelectric portion comprises Aluminum Nitride and said bottom and top electrodes comprises Molybdenum.